

Patent
Attorney's Docket No. 022702-056

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Dominique CANPONT et al) Group Art Unit: Unassigned
Application No.: Unassigned) Examiner: Unassigned
Filed: October 6, 2003)
For: METHOD FOR PREPARING SILICA)
SUSPENSION IN A)
VULCANISABLE SILICON)
MATRIX TO FORM ELASTOMERS)

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please amend the subject application as follows:

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1 - 11 (canceled).

12. (New) Process for preparing a suspension of a particulate filler in a material formed by a silicone oil comprising:

polyorganosiloxanes (POS fluids) of type (I) which carry Si-alkenyl functional groups capable of reacting with the Si-H crosslinking functional groups of a POS fluid of type (II),

optionally, POS fluids of type (II) which carry Si-H crosslinking functional groups capable of reacting with the Si-alkenyl functional groups of the POS fluids (I), and/or, optionally, POS fluids of type (III) which differ from the POS fluids (I) and (II),

the suspension being able to be used for producing silicone compositions that can be cured by polyaddition,

this process being one in which the particulate filler is treated with the aid of a compatibilizing agent or compatibilizer,

comprising introducing a compatibilizer into the preparation mixture:

after contacting of at least part of the silicone oil employed with at least part of the particulate filler used, this compatibilizer introduction taking place in a first step for a compatibilizer fraction corresponding to a proportion of at most 8% by dry weight with respect to the total particulate filler; or

after this POS/filler contacting.

13. (New) Process according to Claim 12, comprising:

mixing a total of:

100 parts by weight of silicone oil,

0 to 5 parts by weight of water,

20 to 80 parts by weight of particulate filler comprising silica; and
1 to 20 parts by weight of compatibilizer selected from silazanes or a
mixture of silazanes;
leaving the above to react,
heating the mixture obtained at a pressure and temperature so that at least
some of the water and of the volatile elements undergoes devolatilization;
and,
if necessary, cooling the mixture.

14. (New) Process according to Claim 12, wherein:

a first compatibilizer fraction is replaced, completely or partly, with at least
one processing aid selected from molecules or combinations of molecules
which are capable of interacting with the particulate filler, to the detriment
of the hydrogen bonds that this particulate filler establishes between its own
atoms and/or with those of the silicone oil, and are capable of being removed
from the preparation mixture by devolatilization, and said processing aid is
in the presence of water in the preparation mixture.

15. (New) Process according to Claim 13, wherein the processing aid is selected
from:

silazanes;
difunctional, or monofunctional, hydroxylated siloxanes;

amines;
organic acids; or
mixtures thereof.

16. (New) Process according to Claim 12, wherein an alkenylated silicone oil comprising at least two Si-alkenyl groups per molecule and having a dynamic viscosity at 25°C not exceeding 250 Pa.s, and a silica having a BET specific surface area of between 50 and 400 m²/g and mixing conditions such that the dynamic viscosity at 25°C of the suspension does not exceed 300 Pa.s are chosen.

17. (New) Process for obtaining a silicone composition that can be cured by polyaddition, comprising mixing the following products:

(A) a suspension comprising polyorganosiloxanes (POS fluids) of type (I) which carry Si-alkenyl functional groups capable of reacting with the Si-H crosslinking functional groups of a POS fluid of type (II), optionally, POS fluids of type (II) which carry Si-H crosslinking functional groups capable of reacting with the Si-alkenyl functional groups of the POS fluids (I), and/or, optionally, POS fluids of type (III) which differ from the POS fluids (I) and (II),
the suspension being able to be used for producing silicone compositions that can be cured by polyaddition,

this process being one in which the particulate filler is treated with the aid of a compatibilizing agent or compatibilizer,
comprising introducing a compatibilizer into the preparation mixture:
after contacting of at least part of the silicone oil employed with at least part of the particulate filler used, this compatibilizer introduction taking place in a first step for a compatibilizer fraction corresponding to a proportion of at most 8% by dry weight with respect to the total particulate filler; or
after this POS/filler contacting,

- (B) one or more polyorganosiloxanes (POS fluids) of type (I), which carry Si-alkenyl functional groups capable of reacting with the Si-H crosslinking functional groups of a POS fluid of type (II),
- (C) one or more polyorganosiloxanes (POS fluids) of type (II), which carry Si-H crosslinking functional groups capable of reacting with the Si-alkenyl functional groups of the POS fluids (I),
- (D) optionally, one or more POS fluids (III), useful as diluent(s) which differ from the POS fluids (I) and (II); and
- (E) a catalytic system comprising a catalyst and, optionally, an inhibitor.

18. (New) Process according to Claim 17, wherein
the composition is produced in the form of a two-component system
comprising parts C₁ and C₂ which are intended to be brought into contact with each other in

order to produce an elastomer crosslinked by polyaddition between the POS fluids (I) and (II),

and only one of the parts, C₁ or C₂, contains some catalyst D and, optionally, one or the other of the POS fluids (I) and (II).

19. (New) Process according to Claim 12, wherein said particulate filler is a siliceous filler.

20. (New) Process according to Claim 12, wherein said Si-alkenyl functional groups are Si-vinyl groups.

21. (New) Process according to Claim 12, wherein said compatibilizer fraction corresponds to a proportion of at most 5% by dry weight with respect to the total particulate filler.

22. (New) Process according to Claim 12, wherein said compatibilizer fraction corresponds to a proportion of at most 3% by dry weight with respect to the total particulate filler.

23. (New) Process according to Claim 13, wherein said silazanes or said mixture of silazanes are disilazanes.

24. (New) Process according to Claim 13, wherein said silazanes or said mixture of silazanes comprises hexamethyldisilazane, optionally combined with divinyltetramethyldisilazane.

25. (New) Process according to Claim 14, wherein said molecules or combinations of molecules are capable of interacting with silicon.

26. (New) Process according to Claim 15, wherein said silazanes comprise hexamethyldisilazane.

27. (New) Process according to Claim 15, wherein said amines are ammonia and/or alkylamines.

28. (New) Process according to Claim 15, wherein said organic acids are formic acid and/or acetic acid.

29. (New) Process according to Claim 16, wherein said alkenylated silicone oil is vinylated silicone oil.

30. (New) Process according to Claim 16, wherein said at least two Si-alkenyl groups are located at one end of the molecule chain.

31. (New) Process according to Claim 16, wherein said silicone oil has a dynamic viscosity at 25°C not exceeding 100 Pa.s.

32. (New) Process according to Claim 16, wherein said silicone oil has a dynamic viscosity at 25°C not exceeding 10 Pa.s.

33. (New) Process according to Claim 16, wherein said dynamic viscosity at 25°C of the suspension does not exceed 250 Pa.s.

34. (New) Process according to Claim 16, wherein said dynamic viscosity at 25°C of the suspension does not exceed 200 Pa.s..